

**INFO 5100 – Application Engineering  
Development**

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**Assignment – 03**

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## **INTRODUCTION**

Choosing a college can be a very tedious process for students. The only source of decision making will be based on the ground research a student does. The traditional way of choosing a college to apply to is usually opening a college website and going through it to get an idea about its ranking, courses provided, location of the university, faculty, tuition fee etc. Our solution makes it easy for a student to have all this information about various colleges, in a single place.

We have worked on a solution that provides a student information about ranking of a college globally and course wise, courses it offers, faculty and their experience, Alumni and their accomplishments, various events the college is known for etc.

## **UNIVERSITY RANKING SOLUTION**

### **PROBLEM STATEMENT:**

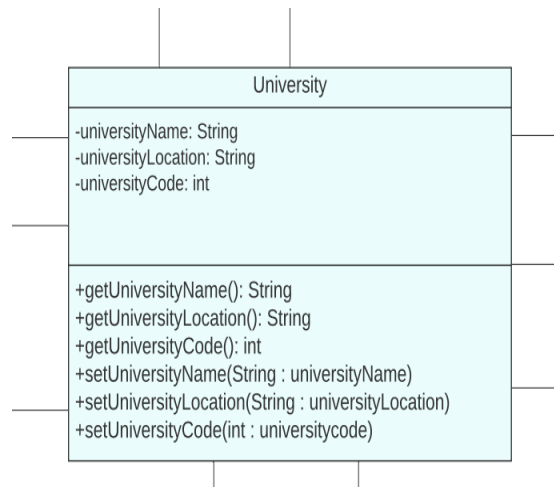
Study ways to create a performance measurement solution to enable universities to measure the quality of the education they deliver to their students. The approach will be used to look into how an educational system in terms of faculty and courses contribute to the growth of their graduates over a 5-year period. You must figure out ways to track the jobs and promotions graduates get over time and assign rankings accordingly. In addition, track the connection of courses and their relevance to graduates' growth.

One of your deliverables will be to design a dashboard that enables college and university administrators to compare the performance of their academic units. One additional question is to consider ways to define your own ranking system for students to decide where they want to go for their studies. The current system is biased toward research.

## UML

### ENTITIES:

#### University -



### Attributes:

`universityName`: this variable is used to identify the University

`universityLocation`: this variable specifies the location of the University

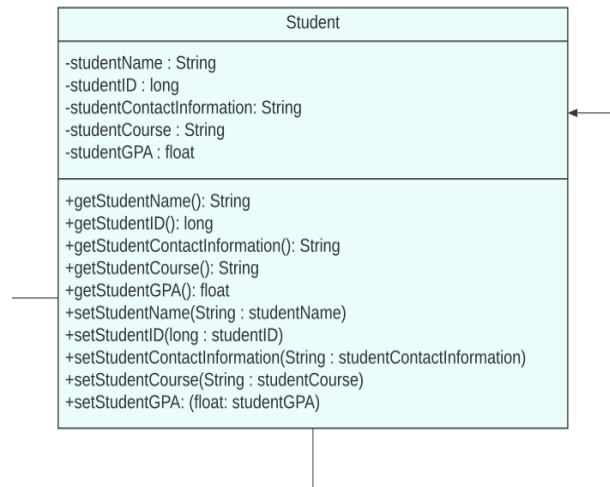
`universityCode`: this variable provides a unique code to identify the University

### Methods:

`getUniversityName`, `getUniversityLocation`, `getUniversityCode`: the get method is used to retrieve data

`setUniversityName`, `setUniversityLocation`, `setUniversityCode`: the set method is used to assign values to the objects

## **Student -**



### **Attributes:**

StudentName: this variable is used to identify the student's name

StudentID: this variable provides a unique ID to the student

StudentContactInformation: this variable provides the contact information of the student

StudentCourse: this variable shows the course taken by the student

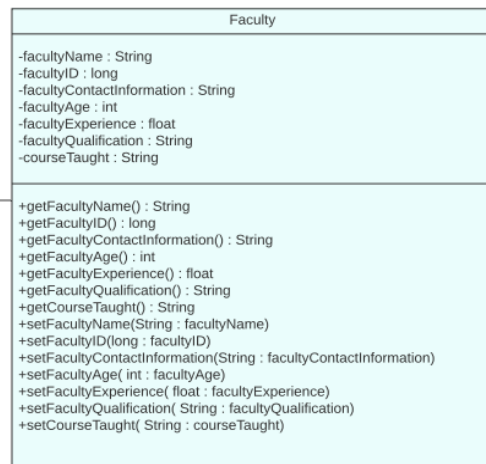
StudentGPA: this variable shows the student's overall GPA

### **Methods:**

getStudentName, getStudentID, getStudentContactInformation, getStudentCourse, getStudentGPA: the get method is used to retrieve the student's data

setStudentName, setStudentID, setStudentContactInformation, setStudentCourse, setStudentGPA: the set method is used to assign values to the given objects

## Faculty -



### **Attributes:**

FacultyName: this variable will provide the faculty name

FacultyID: this variable provides a unique ID for the faculty

FacultyContactInformation: this variable provides the contact information of the faculty

FacultyAge: this variable provides the faculty's age

FacultyQualification: this variable provides the faculty's qualification

FacultyExperience: this variable provides the years of experience

CourseTaught: this variable shows the courses taught by a particular faculty

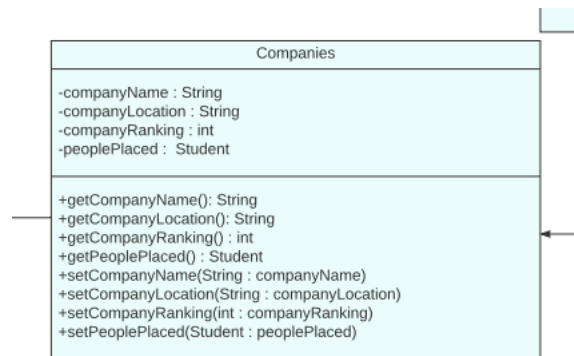
### **Methods:**

getFacultyName, getFacultyID, getFacultyContactInformation, getFacultyAge, getFacultyExperience, getCourseTaught, getFacultyQualification: the get method is used to retrieve the faculty's data

setFacultyName, setFacultyID, setFacultyContactInformation, setFacultyAge, setFacultyExperience, setCourseTaught, setFacultyQualification: the set method is used to set values to the given objects



## Companies -



### Attributes:

CompanyName: this variable shows the company's name

CompanyLocation: this variable provides the company's location

CompanyRanking: this variable provides the company's ranking

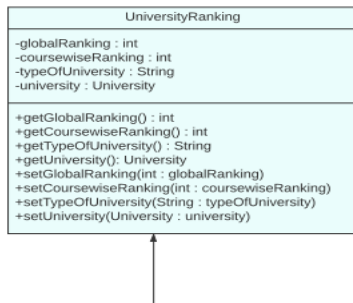
PeoplePlaced: this variable provides information about students who are placed in that company

### Methods:

`getCompanyname`, `getCompanyLocation`, `getCompanyranking`, `getPeoplePlaced` : the get method is used to retrieve the company's data

`setCompanyname`, `setCompanyLocation`, `setCompanyRanking`, `setPeoplePlaced` : the set method is used to assign values to the objects created

## University Ranking -



### **Attributes:**

**GlobalRanking:** this variable provides the university's global ranking

**CoursewiseRanking:** this variable provides the course wise ranking of the university

**TypeOfUniversity:** this variable provides the type of university

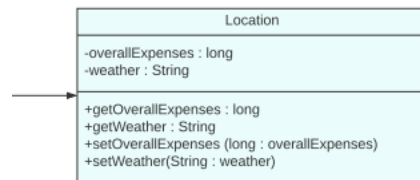
**University:** this variable retrieves the university data

### **Methods:**

**getGlobalRanking, getCoursewiseranking, getTypeOfUniversity, getUniversity:** the get method is used to retrieve the ranking of the university

**setGlobalRanking, setCoursewiseranking, setTypeOfUniversity, setUniversity:** the set method is used to assign values to the objects

## Location -



### **Attributes:**

OverallExpenses: this variable provides an estimate of overall expenses

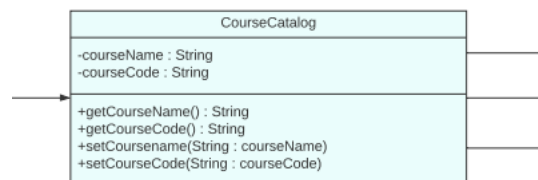
Weather: this variable shows the weather conditions

### **Methods:**

getOverallExpenses, getWeather: the get method is used to retrieve the stored data

setOverallExpenses, setWeather: the set method is used to assign values to the objects

## Course Catalog -



### **Attributes:**

CourseName: this variable provides the course name

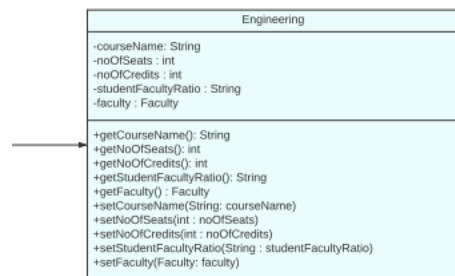
CourseCode: this variable provides the course code

## Methods:

getCourseName, getCourseCode: the get method is used to retrieve the course data

setCourseName, setCourseCode: the set method is used to assign values to the objects

## Engineering -



## Attributes:

CourseName: this variable provides the course name

NoOfSeats: this variable shows the number of seats available

NoOfcredits: this variable shows the number of credits to be taken

StudentFacultyRatio: this variable shows the student faculty ratio

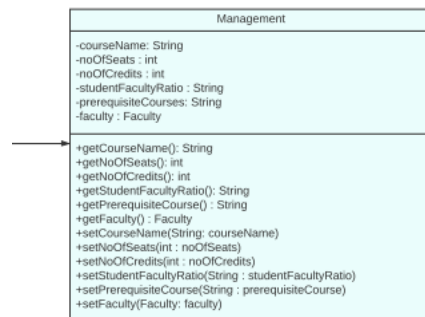
Faculty: this variable retrieves the faculty data

## Methods:

getCourseName, getNoOfSeats, getNoOfCredits, getStudentFacultyRatio, getFaculty : the get method is used to retrieve the course related data

setCourseName, setNoOfSeats, setNoOfCredits, setStudentFacultyRatio, setFaculty : the set method is used assign values to the objects

## **Management -**



### **Attributes:**

CourseName: this variable provides the course name

NoOfSeats: this variable shows the number of seats available

NoOfcredits: this variable shows the number of credits to be taken

StudentFacultyRatio: this variable shows the student faculty ratio

Faculty: this variable retrieves the faculty data

Prerequisites: this variable shows the prerequisites required for the course taken

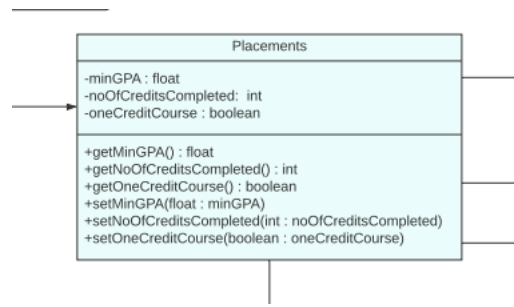
### **Methods:**

getCourseName, getNoOfSeats, getNoOfCredits, getStudentFacultyRatio, getFaculty, getPrerequisites : the get method is used to retrieve the course related data

setCourseName, setNoOfSeats, setNoOfCredits, setStudentFacultyRatio, setFaculty, setPrerequisites : the set method is used assign values to the objects

- The classes named “Engineering” and “Management” are both subclasses of “CourseCatalog”.

## **Placements -**



### **Attributes:**

MinGPA: this variable provides information about minimum GPA requirement

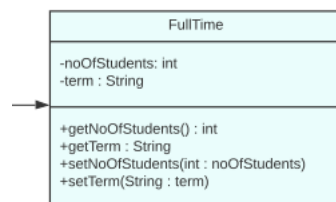
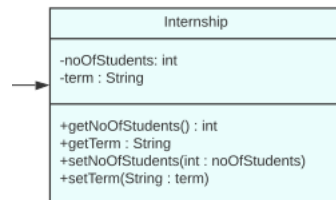
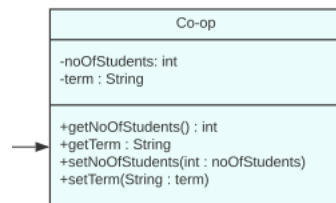
NoOfCreditsCompleted: this variable provides information about the number of credits to be completed

OneCreditCourse: this variable tells whether one credit course is required in a particular university

### **Methods:**

getMinGPA, getNoOfCreditsCompleted, getOneCreditCourse: the get method is used to retrieve placement data

setMinGPA, setNoOfCreditsCompleted, setOneCreditCourse: the set method is used to assign values to the objects



### Attributes:

From the above-mentioned sub-classes of Placements, a student can either be part in COOP, or Part-time job or Full-time job.

**NoOfStudents:** this variable provides information about the number of students placed in co-op, full-time and internships

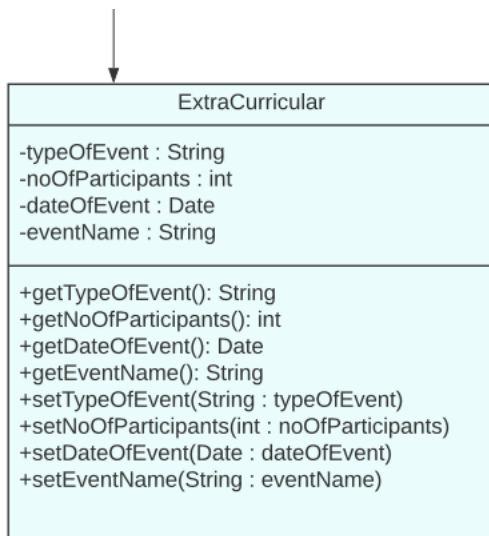
**Term:** this variable provides the term in which a student was placed.

### Methods:

**getNoOfStudents, getTerm:** the get method is used to retrieve data

**setNoOfStudents, setTerm:** the set method is used to assign values to the objects

## **Extracurricular -**



### **Attributes:**

TypeOfEvent: this variable talks about the type of event

NoOfParticipants: this variable provides information about the number of participants

DateOfEvent: this variable shows the event's date

EventName: this variable provides the event name

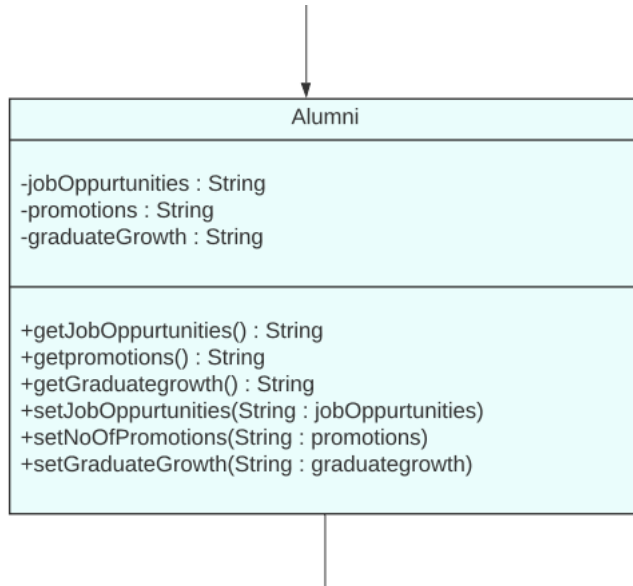
### **Methods:**

getTypeOfEvent, getNoOfParticipants, getDateOfEvent, getEventName: the get method is used to retrieve the events data

setTypeOfEvent, setNoOfParticipants, setDateOfEvent, setEventName: the set method is used to assign values to the objects



## Alumni -



### **Attributes:**

JobOppurtunities: this variable provides information in percentage about the job opportunities

Promotions: this variable provides information in percentage about the promotions after graduation

Graduategrowth: this variable provides information in percentage about the growth

### **Methods:**

getJobOppurtunities, getpromotions, getGraduateGrowth : the get method is used to retrieve the alumni's data

setJobOppurtunities, setpromotions, setGraduateGrowth : the set method is used to set values to the objects after calculating job opportunities, promotions and growth

## University Object Model

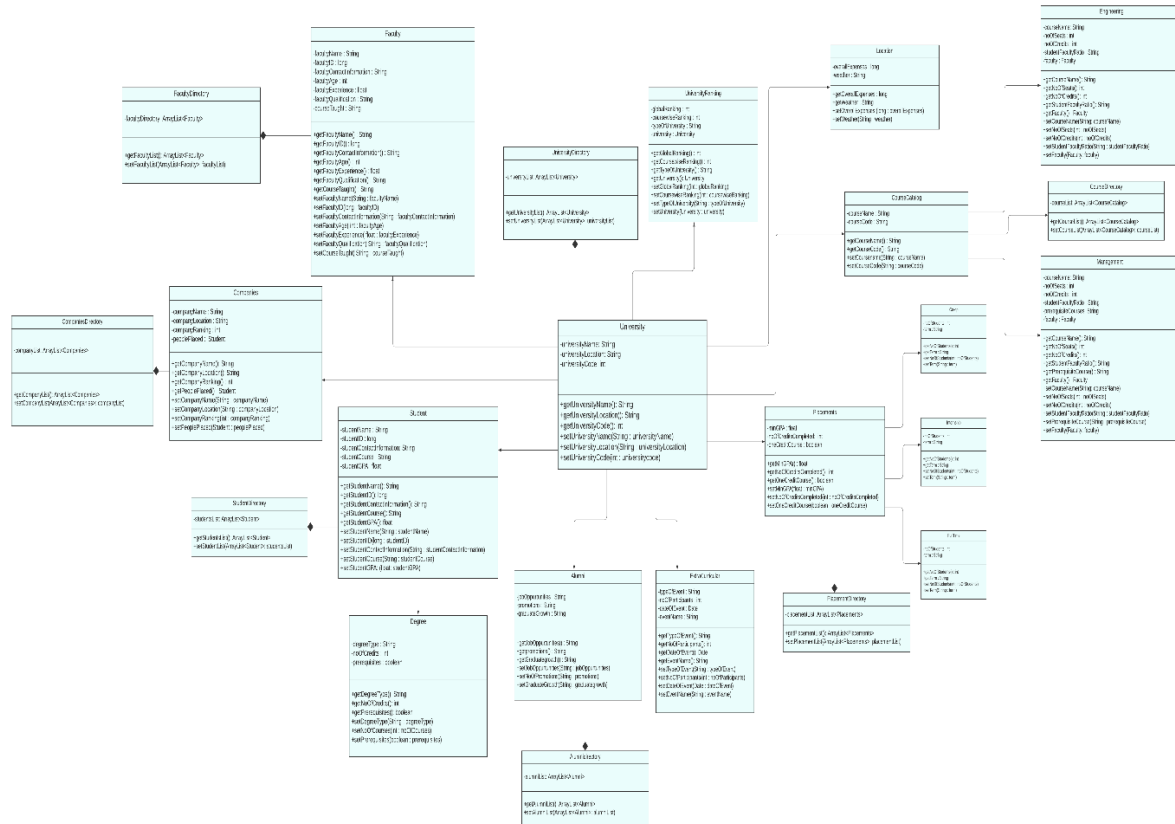


Figure 1: University Object Model

## Sequence Diagram

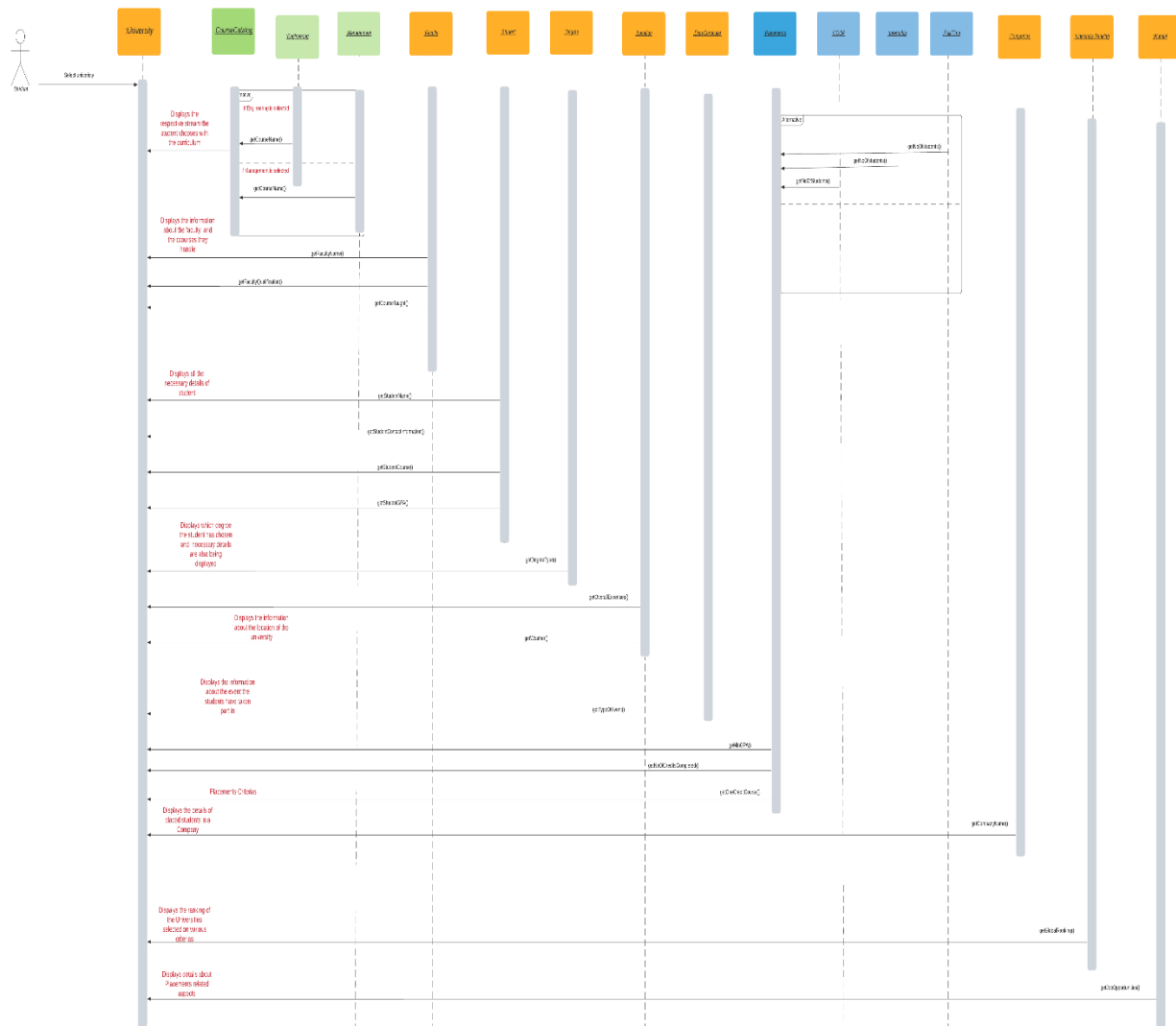


Figure 2: Sequence Diagram

## DASHBOARD

Background – A website that is completely dedicated to help students choose universities after comparing important factors like ranking of the university, courses provided by the university, faculty, alumni working in companies, companies that hire from the university, location etcetera.

The figure shown below is the page with an overview of what is to be done. Once a student lands in this page, they should login into their account or signup if they do not have an active account.

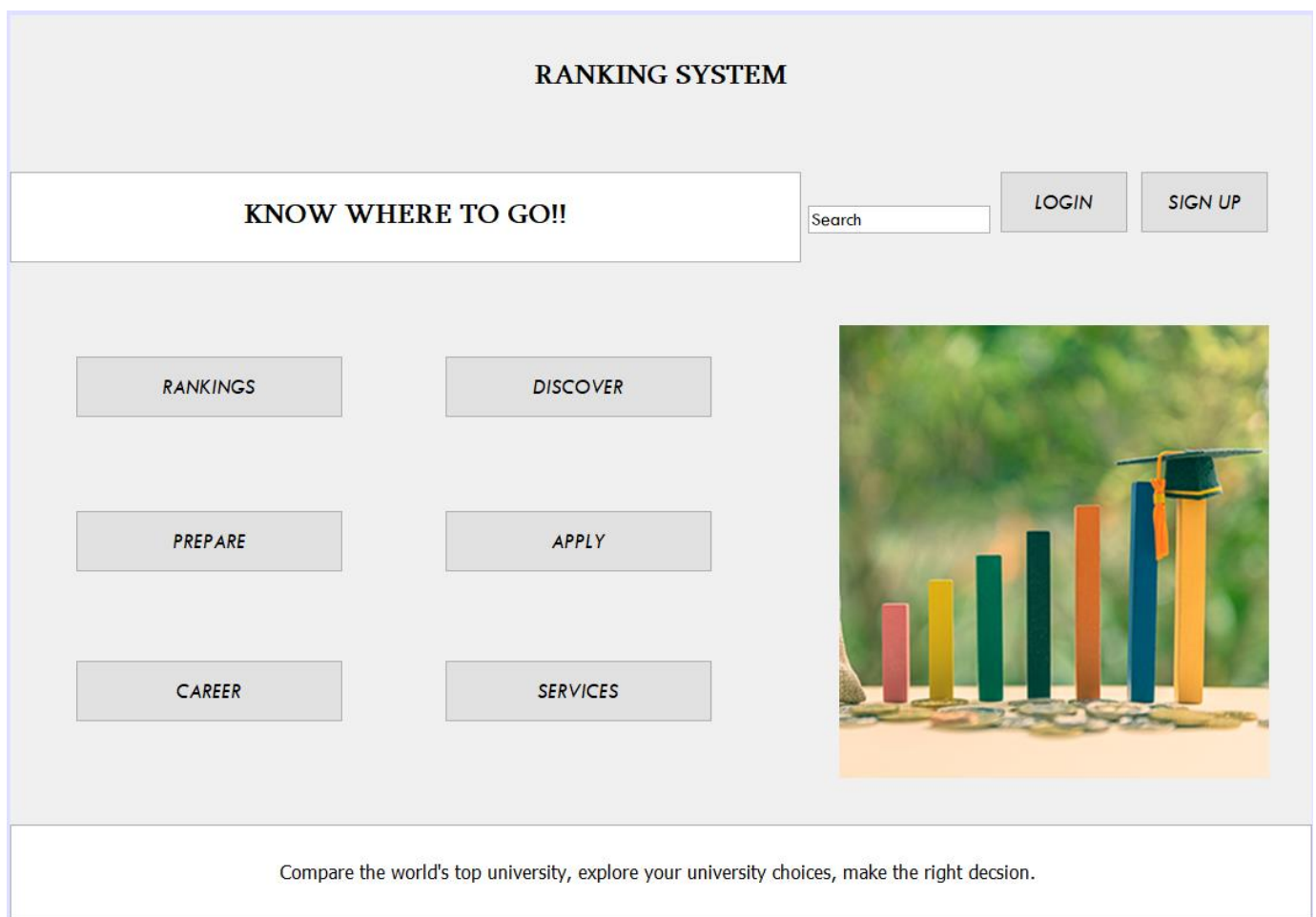
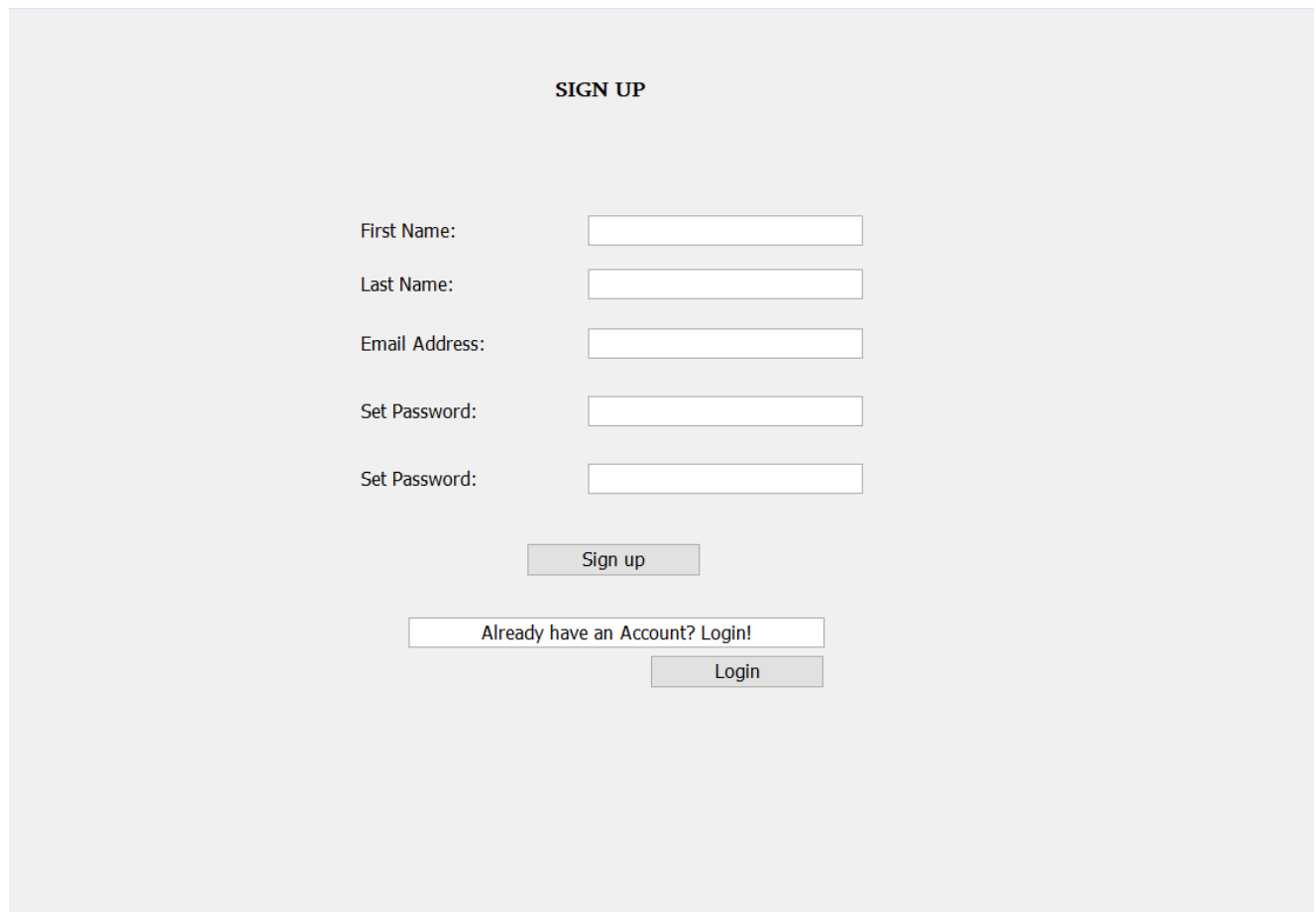


Figure 3: Landing Page

The next figure is the sign-up page for those students who still do not have an account.



The image shows a web form titled "SIGN UP" centered at the top. Below the title, there are five input fields arranged vertically, each preceded by a label: "First Name:", "Last Name:", "Email Address:", "Set Password:", and "Set Password:". Each label and its corresponding input field are aligned to the left. Below the second "Set Password:" field, there is a gray button labeled "Sign up". Underneath the "Sign up" button, there is a white rectangular box containing the text "Already have an Account? Login!". To the right of this box, there is another gray button labeled "Login". The entire form is set against a light gray background.

**SIGN UP**

First Name:

Last Name:

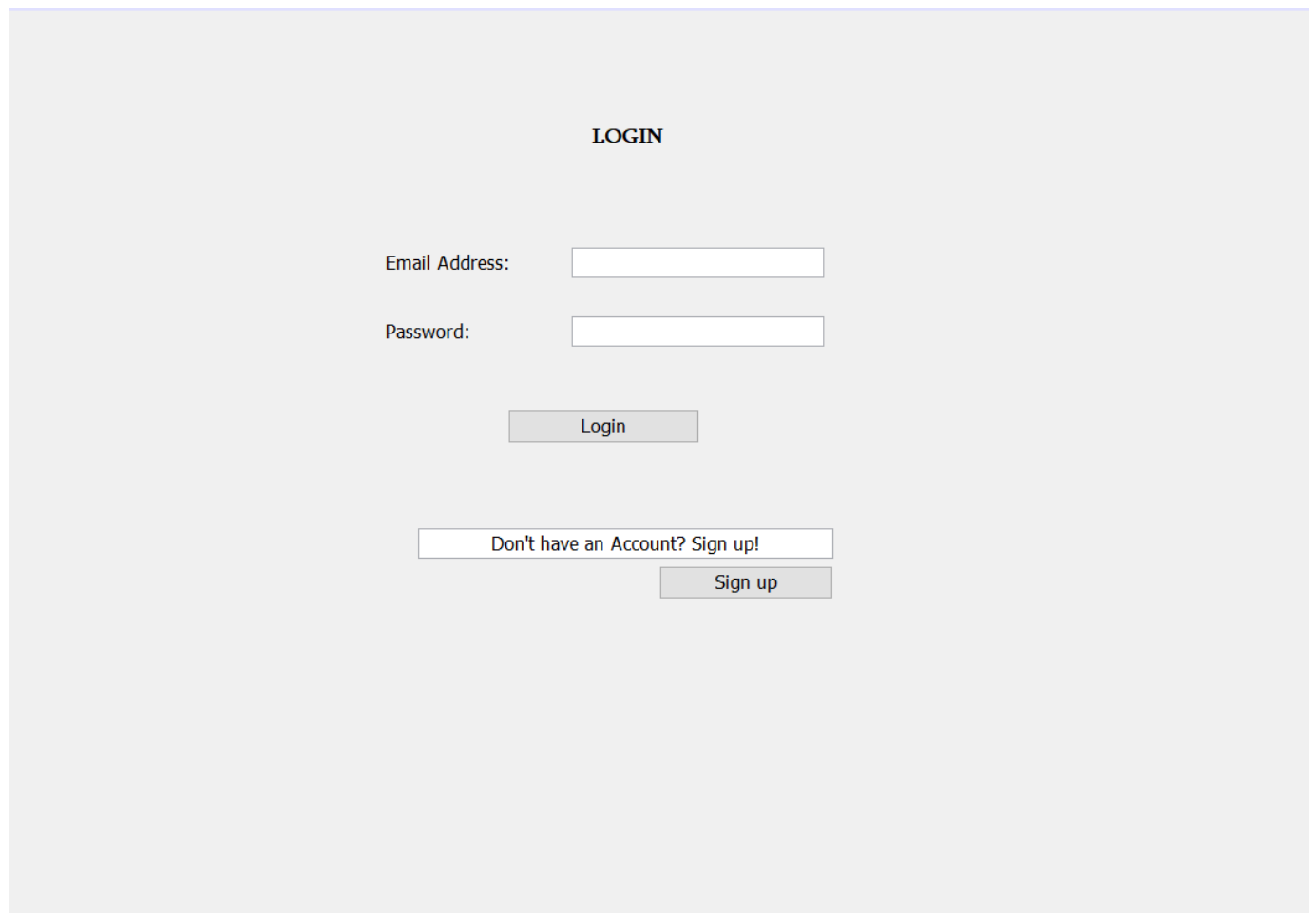
Email Address:

Set Password:

Set Password:

Figure 4: Sign up page

This figure is for students who already have an account.



A login page with a light gray background. At the top center is the word "LOGIN" in bold. Below it are two input fields: "Email Address:" and "Password:". Below the password field is a "Login" button. Below the "Login" button is a link "Don't have an Account? Sign up!" and a "Sign up" button.

LOGIN

Email Address:

Password:

Login

Don't have an Account? Sign up!

Sign up

Figure 5: Login page

There is also a search tab in the main page next to the “Login” button that will help a student search for anything in particular just by typing in what they need.

# RANKING SYSTEM

KNOW WHERE TO GO!!

LOGIN

SIGN UP

RANKINGS


DISCOVER

PREPARE

APPLY

CAREER

SERVICES



Compare the world's top university, explore your university choices, make the right decision.

Next is the “Ranking” Button. When clicked on it, the next figure is the landing page.

**UNIVERSITY RANKINGS**

University Name:	<input type="text"/>
University Code:	<input type="text"/>
Location:	<input type="text"/>
Course:	<input type="text"/>




Figure 6: Rankings page

This page requires a student to fill in details about the university they are interested in going to. Details required are, University Name, University Code, Location and the Course they want to do. Once these details are filled, click on the “Add university” Button, which will add these details into the database.

When the “Add University” button is clicked, the following page is the landing page.



University Comparison

University	Type of University	Gloabl Rank	Course wise ranking

Compare Universities

Figure 7: University Comparison

All the universities when added will be stored in this table and be displayed accordingly. Click on the “Compare Universities” button to display all the details like global ranking and course wise ranking.

Next is the “Discover” Button in the main page. When clicked on this button, the following figure is the landing page.

DISCOVER

Enter University -

Faculty -

Name	Subject	Experience	Qualification

Company -

Name	Location	Company Ranking	People placed

Alumni -

GPA	Company	Graduate growth	Promotions

Figure 8: Discover Page

Once landed on this page, entering the university name is necessary. Once the university is entered, details about the faculty that teach in that university, companies that came to the university and Alumni with details about their GPA, Company they got placed in, Growth from when they graduated and if they had any promotions in the span of 5 years or not.